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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/536,621	05/26/2005	Masahiko Nakamori	UNI40.005APC	9275

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EXAMINER
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MACARTHUR, SYLVIA

ART UNIT	PAPER NUMBER
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1792

NOTIFICATION DATE	DELIVERY MODE
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12/10/2007

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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## Office Action Summary

Application No.

10/536,621

Applicant(s)

NAKAMORI ET AL.

Examiner

Sylvia R. MacArthur

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 7-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date 5/26/2005; 6/17/2005
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Oath/Declaration*

1. Applicant is asked to provide corrected version of the oath with the correct version of the transliteration error of the printed name that previously was recited as not matching, see MPEP 602.02.

### *Double Patenting*

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-4 and 8-15 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-24 of copending Application No. 10/598,717. Although the conflicting claims are not identical, they are not patentably distinct from each other because the co-pending application Regarding claims 1-4, claims a polishing pad having a polishing region and a light transmitting region using in CMP wherein the light transmitting region satisfies the difference in transmittance is within 10% over the range of measurement wavelengths of 400 to 700 nm see claims 1 and 2. The claims do not specifically state 50% or more/less of 80% or more/less, 90% or more, or 5% or less. However, since the claims are directed to a difference in transmittance, the initial and final values can be determined without undue experimentation. Applicant fails to provide a showing of the criticality of the actual percentages, these values can be optimized based upon such factors as the material of construction of the transmittance region and are known to effect the clarity of measurement and the overall endpoint measurement result, see *In re Aller*, 220 F. 2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to optimize the transmittance in the light transmitting region in order to optimize the measurement result in the recited wavelength ranges for use in CMP.

Regarding claim 8: This claim is interpreted as a matter of an intended use as it depends upon the size of the material (substrate) to be polished. Recall, the inclusion of material of article worked upon by a structure being claimed does not impart patentability to the claims. *In re Young*, 75 F. 2d 966, 25 USPQ 69 (CCPA 1935). Regarding claim 9: The claims of the co-pending application

fail to recite that the polishing pad according to claims 1, wherein a scatter of the thickness of the light-transmitting region is 100  $\mu\text{m}$  or less. However, the scatter of the thickness depends upon such process parameters as the material of construction and the shape of the transmitting region. Absent a showing of persuasive evidence that the particular shape is significant, the examiner opines that the shape of the transmitting region is a matter of design choice and well within knowledge and skill of one of ordinary skill in the art at the time of the claimed invention to optimize, see also *In re Dailey*, 357 f. 2d 669, 149 USPQ 47 (CCPA 1966). Applicant fails to provide a showing of the criticality of the actual percentages, these values can be optimized based upon such factors as the material of construction of the transmittance region and are known to effect the clarity of measurement and the overall endpoint measurement result, see *In re Aller*, 220 F. 2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Regarding claims 10 and 11: See claim 23. Regarding claim 12: See claims 3 and 8. Regarding claim 13: See claim 5.

Regarding claim 14: See claims 4 and 9. Regarding claim 15: See claim 6 and 14-17.

4. Claim 7 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-24 of copending Application No. 10/598,717 in view of Takashi et al (JP 11-077517).

Regarding claim 7: The co-pending application does not teach the shape of the light transmittance region. The prior art of Takashi et al (JP 11-077517) teaches a polishing pad with a polishing region and a light transmission region where the light transmission region is illustrated as being rectangular. The shape of the transmitting region is a matter of design choice. Absent a showing of persuasive evidence that the particular shape is significant, the examiner opines that the shape of the transmitting region is a matter of design choice and well within knowledge and

skill of one of ordinary skill in the art at the time of the claimed invention to optimize, see also *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

5. Claims 16-21 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-24 of copending Application No. 10/598,717 in view of Shimomura et al US 2005/0064709).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented. The physical properties recited in claims 16-21 were not recited in the claims of the co-pending application. Shimomura et al teaches grinding pad with a polishing region and a transmitting region the figures illustrates that the pad comprises characteristic iii), see [0085]. Section[0005] recites that it is conventional to construct the pad of polyurethane resin, [0012] of a foamed resin, the compressibility is discussed in [0042], closed cells of a specific average diameter in [0049] and [0063], the storage elastic modulus is discussed in [0072], the density of the foam is recited in [0076], the material of construction is recited in [0091]. The prior art of Shimomura et al teaches a polishing pad with the recited physical properties that are advantageous for using in the design of polishing pad as they provide for an optimal pad capable of polishing a substrate while providing in-situ monitoring of the polishing process. Regarding the compression recovery and the thickness of the transmitting region these are optimizable process parameters that can be determined without undue experimentation. These parameters are further a matter of design choice, such as size, shape and the material of construction. Without a showing of critical of these parameters they are deemed obvious and well within the skill of one familiar with the construction of polishing pad as one of ordinary skill. Thus, it would have been obvious for one of ordinary skill in the art at the time of the

claimed invention to use the teachings of Shimomura et al to modify the claims of the co-pending application to construct a more optimal polishing pad.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 7, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi et al (JP 11-07517).

See the English abstract and the Figure on the English Abstract of Takashi et al teaches a polishing pad with a polishing region and a light transmission region where the light transmission region is illustrated as being rectangular. The figure illustrates that the polishing pad comprises characteristic iii) and that the polishing side comprises groove.

8. Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Hasegawa Toru (JP 2002-324770).

See the English abstract and the Figure on the English Abstract of Takashi et al teaches a polishing pad with a polishing region and a light transmission region where the light transmission region is illustrated as being rectangular. The figure illustrates that the polishing

pad comprises characteristic iii) and that the transmitting section also comprises light transmittance in the wavelength range of 400-800 nm.

9. Claims 1,7,8, 10, 11, 13-19, and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Shimomura et al (US 2005/0064709).

The applied reference has common inventors with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131. Shimomura et al teaches grinding pad with a polishing region and a transmitting region the figures illustrates that the pad comprises characteristic iii), see [0085]. Section[0005] recites that it is conventional to construct the pad of polyurethane resin, [0012] of a foamed resin, the compressibility is discussed in [0042], closed cells of a specific average diameter in [0049] and [0063], the storage elastic modulus is discussed in [0072], the density of the foam is recited in [0076], the material of construction is recited in [0091].

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



11. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toru (JP 2002-324770).

The teachings of Toru were discussed above. The claims do not specifically state 50% or more/less of 80% or more/less, 90% or more, or 5% or less. However, since the claims are directed to a difference in transmittance, the initial and final values can be determined without undue experimentation. Applicant fails to provide a showing of the criticality of the actual percentages, these values can be optimized based upon such factors as the material of construction of the transmittance region and are known to effect the clarity of measurement and the overall endpoint measurement result, see *In re Aller*, 220 F. 2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to optimize the transmittance in the light transmitting region in order to optimize the measurement result in the recited wavelength ranges for use in CMP.

12. Claims 14, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toru in view of Kouchiyu et al (JP 2001261874). The teachings of Toru were discussed above. Toru fails to teach regarding claims 14. The polishing pad according to claims 1, wherein a material for forming the polishing region is fine-cell foam.

Claim 16. The polishing pad according to claim 14, wherein an average cell diameter of the fine-cell foam is 70  $\mu\text{m}$  or less.

Claim 17. The polishing pad according to claims 1, wherein a specific gravity of the fine-cell foam is 0.5 to 1.0 g/cm<sup>3</sup>.

The prior art of Kouchiyu et al teaches a thermoplastic elastomer made fine porous foamed body with the following physical properties that are advantageous for using in the design of polishing pad as they provide for an optimal pad capable of polishing a substrate while providing in-situ monitoring of the polishing process. See the English Abstract. Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to use the material of

Kouchiyu et al to construct the polishing pad. Note of Kouchiyu et al teaches a density of 0.2 to 1 g/cubic centimeter and an average cell diameter of 1 - 30  $\mu\text{m}$ .

13. Claims 2-4, 9, 12, and 20 are rejected under 35 U.S.C. 103(a) as being obvious over Shimomura et al


The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2). Regarding the compression recovery and the thickness of the transmitting region these are optimizable process parameters that can be determined without undue experimentation. These parameters are further a matter of design choice, such as size, shape and the material of construction and the wavelengths. Without a showing of critical of these parameters they are deemed obvious and well within the skill of one familiar with the construction of polishing pad as one of ordinary skill. Thus, it would have been

obvious for one of ordinary skill in the art at the time of the claimed invention to modify the apparatus of Shimomura et al to construct a more optimal polishing pad by optimizing the parameters stated above.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R. MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-Th during the hours of 8 a.m. and 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Sylvia R MacArthur  
Primary Examiner  
Art Unit 1792

November 26, 2007